

Effective Date: Summer 2004-2005

Course Description

Prerequisite: A grade of “C” or better in MATH 1021 or placement by ACT (see placement section of this catalog) or consent of the department. Trigonometric functions and identities, inverse trigonometric functions, graphs, solving triangles and equations, complex numbers, and polar coordinates of equations and inequalities. (A grade of “C” or better is required to advance to any higher numbered mathematics course.)

Course Objectives

Students will:

1. Understand the fundamentals of plane trigonometry as presented in the topical outline.
2. Develop critical thinking and problem solving skills.

Procedures to Evaluate these Objectives

1. In-class problems after concept presentation
2. In-class exams
3. Cumulative final exam

Use of Results of Evaluation to Improve the Course

1. Student responses to in-class problems will be used to immediately help clarify any misunderstandings and to later adjust the appropriate course material.
2. All exams will be graded and examined to determine areas of teaching which could use improvement.
3. All evaluation methods will be used to determine the efficacy of the material presentation.

Detailed Topical Outline

1. Trigonometric Functions
 - a. Measuring Angles and Arcs
 - b. Trigonometric Functions of Acute Angles
 - c. Trigonometric Functions of Any Angles
 - d. Graphs of Sine and Cosine Functions
 - e. Graphs of Other Trigonometric Functions
 - f. Graphing Techniques
2. Trigonometric Identities and Equations
 - a. Verification of Trigonometric Identities
 - b. Sum, Difference, and Cofunction Identities

- c. Double- and Half-Angle Identities
 - d. Identities Involving the Sum of Trigonometric Functions
 - e. Inverse Trigonometric Functions
 - f. Trigonometric Equations
- 3. Applications of Trigonometry
 - a. The Law of Sines
 - b. The Law of Cosines and Area
 - c. Vectors
- 4. Complex Numbers
 - a. Complex Numbers
 - b. Trigonometric Form of Complex Numbers
 - c. De Moivre's Theorem
- 5. Introduction to Polar Coordinates